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LEASING VS BUYING FARM MACHINERY

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AGRICULTURE
Farm Business
Management Branch

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This publication contains a discussion of purchasing agreements compared with leasing agreements for farm machinery in Alberta. The purpose of the publication is to provide information to enable you to discuss alternatives with your competent professional business advisers. It is not intended that you rely upon the material for any other purpose. While every effort has been made to ensure that the information in the publication is correct at the time of its publication, neither the Crown, its agencies or employees, nor the authors of this publication assume any responsibility or liability whatsoever for any financial loss or damage suffered as a result of the publication or use of these materials, or as a result of any changes in the law after the publication of these materials. We recommend that you seek the services of competent professional advisers in dealing with specific problems.

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LEASING VS BUYING FARM MACHINERY

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PREFACE

Capital investments required for purchasing farm machinery have increased tremendously over the past several years and consequently many farmers are considering leasing as an alternative to purchasing. Consideration of all the factors involved with leasing or purchasing is necessary in order for the farmer to make an informed comparison and rational decision. Many details of terms and conditions are not well understood by the farmers and comparisons of different agreements are difficult for farmers unfamiliar with long-term leasing contracts.

This publication is intended to provide a comprehensive discussion of the most important factors of lease agreements. It is also intended to demonstrate a logical procedure for developing financial comparisons of different lease or purchase agreements, using a framework for calculating that has been proven adequate for most capital investment analyses.

Information provided here should make the farmers task of comparison simpler, faster and more objective than before, and should enable the farmer to discuss alternatives with professional advisers. This publication was prepared by Craig Edwards, Farm Management Economist, under the direction of Keith Brown, Supervisor, Farm Planning Section, Farm Business Management Branch, Olds, Alberta.

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INTRODUCTION

Farmers have usually purchased the machinery they use for farming by paying cash or by using a combination of equity (cash) and debt (loans from a credit institution). During the past several years some farmers have had the opportunity to lease machinery as an alternative to purchasing while others are considering leasing.

The most-popular type of lease, correctly called an operating lease, is a short-term lease or rental for seasonal work or for when specialized machinery is needed. The lessee (farmer) usually leases the machinery by the hour, day, month or acre, for a period of less than a year.

Longer leases, from one to five years (or sometimes more) are also correctly named operating leases. Custom work hiring is a form of operating lease, with the owner providing the operator as well as the machinery. Complete farming operations are sometimes carried out by custom farming operators on a per acre basis.

All operating lease and custom hiring payments are usually deductible as an expense for income tax purposes. These arrangements are effective for:

1. Using a specialized machine operated for only a short time.
2. Increasing the ability to get seasonal work done on time.
3. Trying out a new technology for a short time without commitment to a long-term investment.
4. Acquiring the use of a machine for several years without actually owning it.

Another kind of lease that is being used is called a capital lease or financial lease. This type of lease is usually for a longer period of time than an operating lease and may be viewed as an alternative means of financing the acquisition of a machine. Leasing is sometimes considered to be a way to use a farmer's limited capital to the best advantage because it provides 100 per cent financing. It may not always work that way, however, because the lease payments are usually made in advance and the first payment for the lease may be as large as a down payment for a purchase.

Another advantage to leasing is that the duration of the lease may be longer than the years allowed for a machinery-purchase loan from a credit institution, allowing smaller payments per year for the leased machine. Fluctuating interest rates for a loan to purchase machinery might be too hazardous for a farmer as compared with a fixed payment for a leased machine.

There may be other advantages to leasing, depending on size of payments, timing of payments, duration of lease and other factors. Whatever the advantages might be, they should be compared and evaluated. Farmers will be able to judge which lease agreements or purchase agreements are most advantageous to them by comparing all the different factors involved and by calculating the financial requirements of each agreement.

This article provides information and a step-by-step procedure to enable farmers to understand the structure of net cash-flow analysis well enough to discuss projected purchases or leases with professional farm advisers and accountants. The discussion is limited to the purchase or lease of **new machines**.

We will be showing you a procedure for calculating present values of net cash outflows for the years of ownership, or leasing as a means of comparing purchase and lease agreements to determine which one is more advantageous to you. We are assuming that the lowest total net cash outflow for using a machine, purchased or leased, will provide the highest benefit to the farmer by maximizing the cash flow of the farm enterprise.

To find out the net cash outflow amounts, we must calculate the after-tax results for leasing or purchasing. Annual cash payments such as down payments, principal and interest payments, or lease payments constitute the cash outflow, but from that total outflow we must subtract tax benefits which decrease the actual cash outflow.

The tax benefits are allowed for payments of interest, lease payments, Capital Cost Allowance (CCA) and Business Investment Tax Credits (BITC); they change the net cash outflow considerably, depending on taxable income and the tax rate at which income taxes are calculated.

Revenue Canada released a new Interpretation Bulletin, No. IT233R dated February 11, 1983, regarding leasing agreements. You should become familiar with its contents before making a decision to lease or purchase a machine, and get a ruling from Revenue Canada on a proposed lease if possible. If they determine that what you consider a lease is in substance a sale agreement, your calculations of taxable benefits may have to be changed considerably. A copy of the bulletin is included in Appendix C.

Also to be considered are accounting guidelines as explained in the Canadian Institute of Chartered Accountants Handbook. Guidelines for the classification of leases are provided in Section 3065 of the CICA Handbook "Accounting for Leases", issued in December, 1978. Excerpts from the CICA Handbook throughout this publication are reprinted with permission from the Canadian Institute of Chartered Accountants, Toronto, Canada.

1. LEASING FROM LICENSED DEALERS

The Farm Implement Act states in Section 25(1) (b) that "No person shall carry on business as a lessor of farm implements unless he is the holder of a dealer's license".

In other words, only licensed dealers are legally allowed to lease new farm implements to farmers in Alberta. Leases offered by non-dealers should be viewed with scepticism. Contact the Farm Implement Act Inspectors in Alberta for information.

2. TERMS OF LEASE AGREEMENTS

The terms of lease agreements show a great variety. A typical lease contract contains clauses covering the following:

a) Duration of lease or the period of time over which the contract extends.
b) The amount and timing of payments to be made by lessee and the consequences of default.
c) The residual value of the leased asset specified at the time of lease negotiations.
d) Termination values schedules which state the amount which the lessee must pay to the lessor if the lease is terminated prematurely by the lessee.
e) The options available, if any, for the lessee to renew the lease or to purchase the asset at the end of the lease term.
f) Cancellation of the leases by either party and the penalties, if any, for doing so.
g) Responsibilities for payment of executory costs (costs related to operation of leased asset) such as insurance, maintenance, repairs and taxes.
h) Restrictions on hours used or locations where the leased implement is used.

You should compare each of these conditions and terms of the lease with conditions and terms in other leasing and purchase contracts from other companies before you sign a lease. You should also determine if Revenue Canada is going to look at the transaction as a lease or a sale before you make a decision to lease or buy. Your projections of after-tax cash outflows of ownership or leasing may be different depending on what Revenue Canada decides.

3. DEFINITION OF LEASING TERMS

Lease: An agreement conveying the right to use property, plant and equipment usually for a stated period of time.
Lessor: The owner of the property.
Lessee: The individual who is acquiring the right to use the property.
Capital Lease: A lease that transfers substantially all the benefits and risks of ownership of property to the lessee.
Operating Lease: A lease in which not all of the benefits and risks of ownership of property are transferred.
Executory Costs: Costs which are related to the operation of the leased property i.e. insurance, maintenance costs and property costs.
Residual Value of the Leased Property: is the estimated fair value of the leased property at the end of the lease term.

4. CLASSIFICATION OF LEASES FROM LESSEES' POINT OF VIEW

There are two broad groups of leases: operating leases and capital leases.

4.1 Operating Lease

An operating lease is defined in the CICA Handbook as a lease in which the lessor retains substantially all of the benefits and risks associated with ownership. This type of contract is referred to in our earlier publication (Agdex 825-13) as renting. The duration of the lease will vary from an hour or a few days to several months or a few years and is usually much less than the economic life of the implement. Rental of a tractor or a combine for a season would fit into this category, and leasing a machine for five or more years may also be an operating lease.

The rental or lease payment for a farm implement used to produce an income is deductible as an expense of the farm business for income tax purposes.

4.2 Capital Lease

A capital lease is defined in the CICA Handbook as a lease in which substantially all of the benefits and risks of ownership are transferred to the lessee from the lessor. A capital lease is often called a financial or financing lease because the lessee uses it to finance the acquisition of an asset. The lessor is usually in the business of providing financing and the lessee is using the lease as a major source of financing.

Capital leases are usually non-cancellable and the term of the lease (period of time the implement is leased) is for most of the economic life of the asset.

4.3 Conditions of Capital Lease

The lessee of a farm implement (farmer) should consider a lease to be a capital lease when one or more of the following conditions is present (as stated in the CICA Handbook).

4.3.1 Ownership There is reasonable assurance that the lessee will obtain ownership of the leased property by the end of the lease term. Reasonable assurance that the lessee will obtain ownership of the leased property would be present when the terms of the lease would result in ownership being transferred to the lessee by the end of the lease term or when the lease provides for a bargain purchase option.

4.3.2 Duration The lease term is of such a duration that the lessee will receive substantially all of the economic benefits expected to be derived from the use of the leased property over its life span. Although the lease term may not be equal to the economic life of the leased property in terms of years, the lessee would normally be expected to receive substantially all of the economic benefits to be derived from the leased property when the lease term is equal to a major portion (usually 75% or more) of the economic life of the leased property. This is due to the fact that new equipment, reflecting later technology and in prime condition, may be assumed to be more efficient than old equipment which has been subject to obsolescence and wear.

4.3.3 Recovery of Investment The lessor would be assured of recovering the investment in the leased property and of earning a return on the investment as a result of the lease agreement.

This condition would exist if the present value (at the beginning of the lease term) of the minimum lease payments, excluding any portion thereof relating to executory costs, is equal to substantially all (usually 90% or more) of the fair value of the leased property, at the inception of the lease.

It is important for you (or your accountant) to have all the information about a lease contract in order to classify it as an operating or capital lease. If a lease has none of the three conditions detailed above, it should not be classified for accounting purposes as a capital lease. It would then be classified as an operating lease for accounting.

5. INCOME TAX CONSIDERATIONS

Your benefit of income tax deductions from leasing or buying machinery depends on your marginal tax rate. Do not fall into the trap of believing that a higher allowed deduction, which allows you to pay less income tax, means you negotiated a good deal. You are probably paying too much for the use of the implement if your income tax deductions are higher and income tax payments are lower, in comparison with other purchases or leases available for equal equipment. Remember that the deductions are an expense and really do make your net income less, even though you pay less tax. As your marginal tax rate falls, so do the after-tax benefits you project for future years.

Tax considerations are of utmost importance when comparing different methods of acquiring the use of equipment. Most analysts analyze capital investments by comparing present values of the annual cash outflows related to the purchase or lease transactions such as lease payments and purchase payments. Deductible expenses such as interest payments, capital cost allowances and lease payments and their effect on taxes are included in the calculations. Table 1 shows these calculations. If you were to lease a machine on a long term contract that Revenue Canada considers a sale agreement, they may require you to account for the transaction as if it were a purchase. If so, your calculations of tax deductions would be different from those you make for an operating lease but would not necessarily be to your disadvantage. Every situation must be compared before conclusions can be drawn. Study the Interpretation Bulletin (IT-233R) in Appendix C and ask Revenue Canada for a ruling if you think it is necessary.

6. NEGOTIATING A LEASE

There is a considerable difference in the lease agreements offered by different companies. Many of the factors are not negotiable but it is to your advantage to make comparisons on every element of the lease contract so you can make the most favorable deal. Some of these elements are as follows:

6.1 Lease Payment Amounts

Payments are usually made at the beginning of each period or, in other words, payable in advance. When you compare leasing using advance payments against a purchase using a loan whose payments are made at the end of a period, you must consider the time value of your money. An annual payment made in advance is costing you more than if the same annual payment is made at the end of the year. Payments can be annual, semi-annual, quarterly or monthly.

6.2 Timing of First Lease Payment

If you are considering leasing an implement on January 2, 1986, for example, and if you make your annual payment on that date, your tax deductible expense will not be available until 1987. It would be to your advantage to begin the lease on December 15, 1985, so the tax deductible expense would be available in 1986, a year earlier. This is of less importance when the payments are semi-annual, quarterly or monthly because of the smaller payments.

6.3 Leasing Rates

Comparison of leasing rates can be made by calculating the effective annual interest rate being charged on the principal amount, or by making a schedule of payments and showing the present values of the payments to be made as compared with present values of payments on other deals, as we show later on in Tables 1, 3, 4 and 7.

6.4 Duration of Lease

The length of time the contract extends is important because it affects the size of the payments, and the amount of your tax deductible expenses.

6.5 Residual Value

The residual value of the asset (machine) at the end of the lease period is usually specified at the time the lease is negotiated. If the lessee must guarantee a residual value, he should be very careful about the amount of guarantee and the conditions of determining his liability if the implement is sold for less than the guarantee. Can the lessor sell it to a third party for less than market value and have the lessee pay the difference between the lessor realization and the residual value? What will prevent the lessor from doing so?

6.6 Termination Values

The recovery value or termination value is an amount of money which the lessee must pay to the lessor if the lease is terminated prematurely. A schedule of such values is usually established in the lease agreement, covering specific time periods during the contract period. Again the lessee should be very attentive to every detail of the conditions determining his liability for the termination value. Get the conditions in writing and deal only with lessors having good reputations.

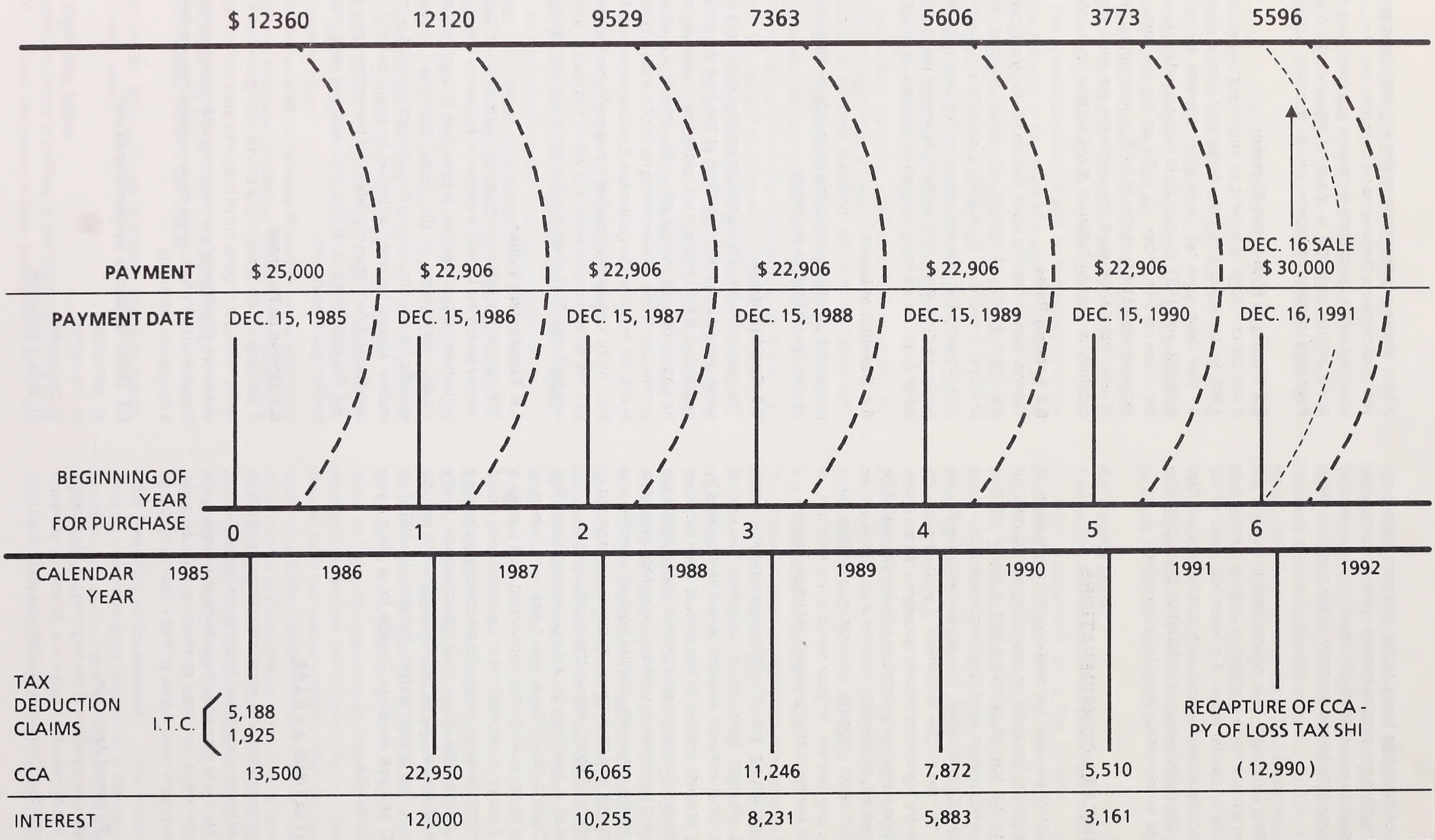
6.7 Option to Purchase

If you deal for an option to purchase, recognize that if the dealer sells out or goes out of business, your option may be worthless. Changes of ownership in dealerships are quite frequent so such options are not very useful in guaranteeing a bargain in the future.

6.8 Other factors to be considered are:

a) warranties
b) insurance
c) tax credits
d) default penalties

TIME-LINE SHOWING ANNUAL CASH FLOWS OF BUYING MACHINERY
TAX RECOVERY REALIZATION (APRIL 1)



CONDITIONS

1. Purchase price of machine = $ 100,000
2. Down payment Dec. 15, 1985 = $ 25,000
3. Bank loan for 5 years at 16% = $ 22,906 per year
4. FARMERS TAXABLE INCOME = $ 40,000
5. Machine sold for $ 30,000 on Dec. 1, 1991 after six years use

FIGURE 1

7. FINDING THE BEST DEAL

In comparing two or more alternatives, such as leasing compared with purchasing a tractor, a procedure known as present value analysis is commonly used. Several different deals can be compared by calculating the cash outflows associated with leasing or owning in a separate schedule and by determining which one has the lowest total present value of net cash outflows over the years of ownership or leasing. To make the required calculations, we use the following assumptions:

1. Sums of money are comparable when the comparison is made at the same point in time.
2. A dollar spent at some future date is worth less than a dollar spent today.
3. A dollar received at some future date is worth less than a dollar received today.

Our examples will compare the present values of ownership or leasing net cash outflows, after tax benefits are included in the calculations. All other factors which do not affect cash flows are ignored. A rational decision maker would choose the deal that has the lowest total present value of after-tax net cash outflows. A discount rate of 10 per cent is used for the present value calculations.

8.0 EXAMPLE OF CALCULATIONS

8.1 Details of Proposed Purchase A tractor can be purchased for $100,000 with $25,000 paid at the beginning of the purchase contract and a bank loan used to pay the balance in five equal amortization payments which include principal and interest, with interest at 16 per cent per annum. The contract will be signed and the down payment made on December 15, 1985 and payments on the bank loan will be paid on December 15th for the next five years. Bank loan payments will be $22,906 each year for the loan which will be amortized over five years, with the first payment made one year after the date of purchase.

The purchaser expects a taxable income of $40,000 before purchase of the tractor; his fiscal year is the calendar year January 1st to December 31st. The purchaser pays his income tax on the cash method of computing income.

The purchaser plans to sell the tractor on December 16, 1991 after the sixth year of ownership has ended.

It will be helpful to draw a time-line diagram as shown in Figure 1.

8.2 Determination of Present Value of Ownership Costs

1. Given the above information, construct a Capital Cost Allowance Schedule as shown in Figure 2.

   Calculate the Business Investment Tax Credit at 7 per cent or 10 per cent (whichever is applicable in your area, you can find this out from your district taxation office). For our purposes we will use the maximum allowed at 10 per cent.

2. Subtract the amount of B.I.T.C. from the purchase price of the tractor ($100,000 - $10,000 = $90,000) to get the Undepreciated Capital Cost of the machine at the beginning of the year of purchase. Although the purchase is to be made on December 15, 1985, C.C.A. for the full year is allowed as an income tax expense.

3. The maximum rate of Annual C.C.A. is used for calculating purposes; for 1985 the rate is 15 per cent (½ of 30%) for the amount of $13,500 ($90,000 x 15 per cent = $13,500). In the following years, the maximum rate used is 30 per cent.

   After completion of the Capital Cost Allowance schedule as shown in Figure 2, the next step is to construct a schedule showing details of payments of principal (down payment, and subsequent loan payments) and interest.

FIGURE 2

CAPITAL COST ALLOWANCE SCHEDULE

Year			U.C.C. at Beginning of Year	Rate %	Annual C.C.A.	U.C.C. at End of Year
	Original Cost	100,000				
	Subtract Investment Tax Credit	10,000				
1	Undepreciated Capital Cost =		90,000	½ x 30	13,500	76,500
2			76,500	30	22,950	53,550
3			53,550	30	16,065	37,485
4			37,485	30	11,246	26,240
5			26,240	30	7,872	18,368
6			18,638	30	5,510	12,858

The interest payments are deductible as an expense so the tax benefit from an interest payment made in Year 1 will affect income tax payable for Year 1.

The B.I.T.C. and C.C.A. are also entered. They are written in the column for the year in which they are a tax benefit. We are trying to determine ownership net cash outflows so tax deductions must be allocated to the year in which they would have an effect on income taxes payable. All of the payments and tax allowances are entered in Table 1. Because tax benefits will be received in less than six months, the tax deductible payments and related benefits are entered for the same year for our example.

8.3 Explanation of Table I This table shows a detailed step-by-step procedure for entering the down payment, and payments of principal and interest on the loan to purchase the tractor. In other words, the annual cash flows of purchasing are entered in the appropriate columns. Then the tax benefits must be calculated from the information supplied, to determine B.I.T.C., C.C.A. and interest expense. The results are entered in the year they have an effect on income tax paid and subsequently on the cash flow of the business. Taxable income, in our example, has been estimated by the farmer to be $40,000 with a 1984 tax payable of $12,779, before estimates of the tractor purchase have been included. We then have to determine changes in taxable income, changes in tax payable after purchase, tax saved after purchase and total tax recovery. Total cash payments for the tractor in Year 2 are $22,906 but total tax recovery is $9,529 so the net cash paid out is $13,377. We are using 1984 tax tables because they were the most recent available.

After the net cash out is determined, the amount for each year must be discounted to find the present value of the amount. We use the discount factors for a discount rate of 10 per cent in this example. The annual present value amounts are then added to get the total present value of all the net cash outflows.

Row 1 - shows the principal balance owing on the loan at date of purchase when $25,000 is paid down on tractor and a bank loan for $75,000 is taken to pay the remainder to the vendor. The loan is amortized over five years with first payment made December 15, 1986, at beginning of Year 1 of schedule. Principal balance shows the remainder after payment is made on December 15th of the year.

Row 2 - shows the cash down payment of $25,000 to vendor on December 15, 1985, at beginning of Year 0, and the payments of principal combined in following years to be paid on December 15th.

Row 3 - shows the interest payment for the year.

Row 4 - shows total payment each year. Year 6 shows $30,000 received when the tractor is sold on December 16, 1991.

Row 5 - shows the Investment Tax Credit earned on $100,000 at 10% = $10,000, at beginning of Year 0 (when purchase is made December 15, 1985).

Row 6 - shows the annual Capital Cost Allowance for the year in which it will be a tax benefit. The annual C.C.A. for Year 0 is $13,500 as taken from the schedule in Figure 2, and is entered in Table 1 for Year 0 when it is a tax benefit. The annual Capital Cost Allowances from the following years are entered in the year of tax effect.

In Year 6 the tractor will be sold for $30,000 and that amount is entered in Row 4 for Year 6. Because of the sale of the tractor for $30,000 which has an undepreciated capital cost of $12,858 at the end of Year 5 and will be sold on December 16, 1990 of Year 6, a recapture of C.C.A. is triggered for $30,000 - $12,858 = $17,142. If this were the only machine in the class, we would enter $17,142 for Year 6. However, if there are other items in Class 10, we should adjust the recapture value by subtracting the present value of the loss of a tax shield from the $17,142 recapture. The formula is:

$$\text{PV of loss of tax shield} = C\,\frac{dT}{d+K}$$

where C = U.C.C. of tractor sold = 12,858
d = maximum rate of CCA = 30%
T = marginal tax rate = 43.05%
K = discount rate = 10%

$$PV = \$12{,}858\ \frac{.3 \times .4305}{.3 + .1} = \$4{,}151.52 \text{ (at Dec. 16, 1991)}$$

Subtract: $17,142 - $4,151.52 = $12,990

so ($12,990) is entered in Row 2 Year 6. This negative (...) cash outflow increases taxable income and taxes paid in Year 6.

Row 7 - shows the calculation of taxable income after deducting interest and capital cost allowance. Taxable income is $40,000, no interest is paid in Year 0 and CCA is $13,500 so taxable income in Year 0 is $40,000 - 13,500 = $26,500 which is rounded to nearest $1,000 to be $27,000 which is entered in Row 7, Year 0.

Remember that taxable income is not affected by the Investment Tax Credit which is deducted directly from Federal Tax payable.

Row 8 - shows Federal Taxes payable at the taxable income calculated in Row 7. The taxes payable are taken from the computer produced marginal tax table for the 1984 income tax year, Table 2.

When taxable income was reduced to $27,000 (approximately) by deduction of CCA of $13,500 (in Row 7) Federal tax payable became $5,188 so $5,188 is entered in Row 8, Year 0.

Row 9 - shows the ITC claimed which is only claimable against federal tax payable of $5,188 so $5,188 is entered in Row 9, Year 0.

Row 10 - From the $10,000 ITC earned as shown in Row 5, only $5,188 can be claimed against $5,188 of federal tax payable. The remainder of $10,000 - 5,188 = $4,812 can be claimed in following years against federal tax payable. This would require annual changes in the capital cost allowance schedules. An alternative is the one we use where a taxpayer can request a refund on the unclaimable portion in the year of partial claim and receive 40 per cent of the amount to be refunded. In our example we estimate 40 per cent of $4,812 = $1,925 will be refunded so we enter $1,925 in Row 10, Year 0.

Row 11 - Tax payable was given on 1984 taxable income of $40,000 at 12,779 for each year in Row 11.

Row 12 - Tax payable in Year 0 is $7,532 as shown in tax table for taxable income of $27,000.

Row 13 - Tax saving for Year 0 is $12,779 - 7,532 = $5,247.

Row 14 - shows total tax recovery. Add to the tax saving of $5,247 (Row 13) the expected refund of $1,925 (Row 10) and the ITC claim of $5,188 (Row 9) for a total tax recovery of $12,360.

Row 15 - shows the net cash outflow. Total payment for Year 0 was $25,000 from which you subtract total tax recovery of $12,360 to get net cash outflow of $12,640.

Row 16 - shows the present value factors for each year of owning at a discount rate of 10 per cent. As viewed from the beginning of Year 0, $1,000 of cash outflow in Year 5 has a present value of $1,000 x .621 = $621. This is the essence of the method of comparing different amounts of money to be paid or received at different times in the future.

The discount rate can be determined by estimating the interest that could be earned in the next best alternative investment and then multiply the rate by one minus the marginal tax rate. A 15 per cent return on investment with marginal tax rate of 35 per cent would be 15 (1-.35) = 15 (.65) = 10.4 per cent return on investment after taxes. Present value factors are provided in Table 8, Appendix A.

Row 17 - shows the present value of net cash outflows for Year 0 to Year 6 when the tractor is sold.

Row 18 - shows the final result of all the calculations in Table 1. By summing all the present value figures in Row 17, the total present value of net cash outflow is determined.

Summary of Table 1

The table shows all the cash inflows and outflows associated with the purchase of a tractor and the calculation of total present value of net cash outflows for the period of ownership.

TABLE I

Row	Beginning of Year	0	1	2	3	4	5	6	7	8	9
1	Principal Balance $100000	75000	64094	51443	36768	19745	0	0			
2	Principal Payment	25000	10906	12651	14675	17023	19745				
3	Interest Payment (or operating lease payment)		12000	10255	8231	5883	3161				
4	Total Payment (R1 + R2)	25000	22906	22906	22906	22906	22906	(30000)			
5	Investment Tax Credit Earned	10000									
6	Capital Cost Allowance claimed	13500	22950	16065	11246	7872	5510	(12990)			
7	Taxable income after allowance T1-(R3 + R6)	27000	5050	13680	20523	26245	31329	52990			
8	Federal Taxes Payable at ____	5188									
9	Investment Tax Credit claimed against Federal Tax	5188									
10	Refund on unused portion of ITC (R5-R8) x .4	1925									
11	Tax payable before purchase or lease	12779	12779	12779	12779	12779	12779	12779			
12	Tax payable after purchase or lease	7532	659	3250	5416	7173	9006	18373			
13	Tax Saving (R11 - R12)	5247	12120	9529	7363	5606	3773	(5596)			
14	Total Tax Recovery (R9+R10+R13)	12360	12120	9529	7363	5606	3773	(5596)			
15	Net Cash Outflow (R4-R14)	12640	10786	13377	15543	17300	19133	(24404)			
16	Present Value Factors at 10%	1	.909	.826	.751	.683	.621	.564			
17	Present Value of Net Cash Outflow (R15 x R16)	12640	9804	11049	11673	11816	11882	(13764)			
18	Total Present Value of Net Cash Outflows								55100		

TABLE 2

1984 Tax Rates

TAXABLE INCOME	BASIC FED TAX	GENERAL TAX RED	ALBERTA TAX	ALBERTA TAX RED	TOTAL TAX PAY	AVERAGE TAX RATE (%)	MARGINAL TAX RATE (%)
1000	60.00	60	26.10	26.10	0.00	0.00	0.00
2000	195.92	195.92	85.23	85.23	0.00	0.00	0.00
3000	361.08	200	157.07	157.07	161.08	5.37	16.11
4000	531.08	200	231.02	184.49	377.61	9.44	21.65
5000	701.64	200	305.21	147.39	659.46	13.19	28.19
6000	881.64	200	383.51	108.24	956.91	15.95	29.74
7000	1061.64	200	461.81	69.09	1254.36	17.92	29.75
8000	1247.68	200	542.74	28.63	1561.79	19.52	30.74
9000	1437.68	200	625.39	0.00	1863.07	20.70	30.13
10000	1627.68	200	708.04	0.00	2135.72	21.36	27.26
11000	1817.68	200	790.69	0.00	2408.37	21.89	27.27
12000	2007.68	200	873.34	0.00	2681.02	22.34	27.27
13000	2204.00	200	958.74	0.00	2962.74	22.79	28.17
14000	2404.00	200	1045.74	0.00	3249.74	23.21	28.70
15000	2604.00	200	1132.74	0.00	3536.74	23.58	28.70
16000	2804.00	200	1219.74	0.00	3823.74	23.90	28.70
17000	3004.00	200	1306.74	0.00	4110.74	24.18	28.70
18000	3223.64	200	1402.28	0.00	4425.92	24.59	31.52
19000	3453.64	200	1502.33	0.00	4755.97	25.03	33.01
20000	3683.64	200	1602.38	0.00	5086.02	25.43	33.01
21000	3913.64	200	1702.43	0.00	5416.07	25.79	33.01
22000	4143.64	200	1802.48	0.00	5746.12	26.12	33.01
23000	4388.00	200	1908.78	0.00	6096.78	26.51	35.07
24000	4638.00	200	2017.53	0.00	6455.53	26.90	35.88
25000	4888.00	200	2126.28	0.00	6814.28	27.26	35.88
26000	5138.00	200	2235.03	0.00	7173.03	27.59	35.88
27000	5388.00	200	2343.78	0.00	7531.78	27.90	35.88
28000	5638.00	200	2452.53	0.00	7890.53	28.18	35.88
29000	5888.00	200	2561.28	0.00	8249.28	28.45	35.88
30000	6138.00	186.2	2670.03	0.00	8621.83	28.74	37.25
31000	6388.00	161.2	2778.78	0.00	9005.58	29.05	38.38
32000	6638.00	136.2	2887.53	0.00	9389.33	29.34	38.38
33000	6888.00	111.2	2996.28	0.00	9773.08	29.62	38.38
34000	7138.00	86.2	3105.03	0.00	10156.83	29.87	38.38
35000	7404.80	59.52	3221.09	0.00	10566.37	30.19	40.95
36000	7704.80	29.52	3351.59	0.00	11026.87	30.63	46.05
37000	8004.80	0	3482.09	0.00	11486.89	31.05	46.00
38000	8304.80	0	3612.59	0.00	11917.39	31.36	43.05
39000	8604.80	0	3743.09	0.00	12347.89	31.66	43.05
40000	8904.80	0	3873.59	0.00	12778.39	31.95	43.05
41000	9204.80	0	4004.09	0.00	13208.89	32.22	43.05
42000	9504.80	0	4134.59	0.00	13639.39	32.47	43.05
43000	9804.80	0	4265.09	0.00	14069.89	32.72	43.05
44000	10104.80	0	4395.59	0.00	14500.39	32.96	43.05
45000	10404.80	0	4526.09	0.00	14930.89	33.18	43.05
46000	10704.80	0	4656.59	0.00	15361.39	33.39	43.05
47000	11004.80	0	4787.09	0.00	15791.89	33.60	43.05
48000	11304.80	0	4917.59	0.00	16222.39	33.80	43.05
49000	11604.80	0	5048.09	0.00	16652.89	33.99	43.05
50000	11904.80	0	5178.59	0.00	17083.39	34.17	43.05
51000	12204.80	0	5309.09	0.00	17513.89	34.34	43.05

TABLE 2

1984 Tax Rates

TAXABLE INCOME	BASIC FED TAX	GENERAL TAX RED	ALBERTA TAX	ALBERTA TAX RED	TOTAL TAX PAY	AVERAGE TAX RATE (%)	MARGINAL TAX RATE (%)
52000	12504.80	0	5439.59	0.00	17944.39	34.51	43.05
53000	12804.80	0	5570.09	0.00	18374.89	34.67	43.05
54000	13104.80	0	5700.59	0.00	18805.39	34.82	43.05
55000	13404.80	0	5831.09	0.00	19235.89	34.97	43.05
56000	13704.80	0	5961.59	0.00	19666.39	35.12	43.05
57000	14004.80	0	6092.09	0.00	20096.89	35.26	43.05
58000	14304.80	0	6222.59	0.00	20527.39	35.39	43.05
59000	14604.80	0	6353.09	0.00	20957.89	35.52	43.05
60000	14927.84	0	6493.61	0.00	21421.45	35.70	46.36
61000	15267.84	0	6641.51	0.00	21909.35	35.92	48.79
62000	15607.84	0	6789.41	0.00	22397.25	36.12	48.79
63000	15947.84	0	6937.31	0.00	22885.15	36.33	48.79
64000	16287.84	0	7085.21	0.00	23373.05	36.52	48.79
65000	16627.84	0	7233.11	0.00	23860.95	36.71	48.79
66000	16967.84	0	7381.01	0.00	24348.85	36.89	48.79
67000	17307.84	0	7528.91	0.00	24836.75	37.07	48.79
68000	17647.84	0	7676.81	0.00	25324.65	37.24	48.79
69000	17987.84	0	7824.71	0.00	25812.55	37.41	48.79
70000	18327.84	0	7972.61	0.00	26300.45	37.57	48.79
71000	18667.84	0	8120.51	0.00	26788.35	37.73	48.79
72000	19007.84	0	8268.41	0.00	27276.25	37.88	48.79
73000	19347.84	0	8416.31	0.00	27764.15	38.03	48.79
74000	19687.84	0	8564.21	0.00	28252.05	38.18	48.79
75000	20027.84	0	8712.11	0.00	28739.95	38.32	48.79
76000	20367.84	0	8860.01	0.00	29227.85	38.46	48.79
77000	20707.84	0	9007.91	0.00	29715.75	38.59	48.79
78000	21047.84	0	9155.81	0.00	30203.65	38.72	48.79
79000	21387.84	0	9303.71	0.00	30691.55	38.85	48.79
80000	21727.84	0	9451.61	0.00	31179.45	38.97	48.79
81000	22067.84	0	9599.51	0.00	31667.35	39.10	48.79
82000	22407.84	0	9747.41	0.00	32155.25	39.21	48.79
83000	22747.84	0	9895.31	0.00	32643.15	39.33	48.79
84000	23087.84	0	10043.21	0.00	33131.05	39.44	48.79

To compare the purchase shown with a different transaction (buy or lease with a different series of payments) you would use a similar table to enter the details of the other transaction and determine the total present values of net cash outflows for the same period of time. You could then compare the numbers in Row 18 to see which one had the lowest total present value of net cash outflow. Table 1 shows a total of $55,100, so if the other transaction showed a total of $45,000 it would be the best buy, other considerations being equal.

This method is the simplest way to make a comparison of similar transactions with different payments, showing how they will affect taxes and cash flow. It can be made a little easier by using marginal tax rates instead of actual tax rates. Using marginal tax rates is not as accurate as using actual tax rates, but is much less time consuming than the method used in Table 1 (actual tax rates) and is being used by analysts who consider it to be adequate for the comparisons of payments for different deals.

The total of all present value net cashflow amounts is $55,048 in Table 3 as compared with $55,100 in Table 1 using the detailed method of determining tax benefits. This difference is not significant so it is possible to use the short-cut method using a marginal tax rate as in Table 3 to make comparisons instead of using the more detailed method in Table 1. We will use the marginal tax rates to do the following analyses of the operating lease and capital lease

8.4 Marginal tax rates are defined as the increased amount of tax to be paid for an increase of $1 in taxable income. Table 2 shows the marginal tax rates for the 1984 tax year as well as the average tax rates used for Table 1 calculations.

At a taxable income of $40,000 taxes payable are $12,779 at a marginal tax rate of 43.05 per cent. When taxable income was decreased to $5,650 (Table 1, Year 1, Row 7), tax payable was decreased to $659 with a marginal tax rate of 28.19 per cent (at $5,000 taxable income). The average marginal rate for Year 0 to Year 6 was 34.7 per cent in Table 1.

Table 3 shows the present value analysis of the same tractor deal as shown in Table 1 by the shorter method using a marginal tax rate of 35 per cent and the same discount rate of 10 per cent. In Year 6 the tractor was sold for $30,000 but the CCA recapture was calculated with no adjustment for present value of loss of a tax shield as we did in Table 1. Also the investment tax credit was claimed with no adjustments for the reality of the situation as explained with Table 1. However, the total present value of net cash outflows turned out to be $55,048 which is very close to the value shown on Table 1 ($55,100) which had much more detailed calculations.

We find the marginal tax rate analysis to be quite acceptable as an easy-to-calculate present value analysis to compare transactions with different payment schedules to decide

TABLE 3

PRESENT VALUE ANALYSIS OF NET CASH OUTFLOW TRACTOR PURCHASE

1 YEAR	2 PAYMENT	3 INTEREST ON LOAN	4 C.C.A.	5 I.T.C.	6 TAX BENEFIT (3 + 4xT.R. + 5)	7 NET CASH OUTFLOW (2-6)	8 PRESENT VALUE FACTOR 10%	9 PRESENT VALUE OF CASH OUTFLOW (7x8)
0	25000		13500	10000	14725	10275	1	10275
1	22906	12000	22950		12 233	10673	.909	9702
2	22906	10255	16065		9212	13694	.826	11311
3	22906	8231	11246		6817	16 089	.751	12083
4	22906	5883	7872		4814	18 092	.683	12357
5	22906	3161	5510		3034	19871	.621	12340
6	(30000)		(17142)		(6914)	(23086)	.564	(13020)
TOTAL								55048

T.R. = Marginal Tax Rate = 35%

TABLE 4

OPERATING LEASE OR CUSTOM WORK

1 YEAR	2 PAYMENT	3 TAX SAVINGS (2xT.R.)	4 NET CASH OUTFLOW (2-3)	5 PRESENT VALUE FACTOR 10%	6 PRESENT VALUE OF NET CASH OUTFLOW (4x5)
0	21 000	7350	13650	1	13650
1	21 000	7350	13650	.909	12408
2	21 000	7350	13650	.826	11 275
3	21 000	7350	13650	.751	10251
4	21 000	7350	13650	.683	9323
5	21 000	7350	13650	.621	8477
TOTAL					65384

T.R. = Marginal Tax Rate = 35%

which has the lowest total present value of net cash outflows. Be careful to evaluate the transactions for the same period of time and consider the disposal or retention of the machine on the same basis for all transactions you attempt to compare. We will use this marginal tax rate method to compare an operating lease (Table 4) and a financial lease (Table 7) as well as the purchase in Table 3.

8.5 Details of Proposed Operating Lease

The dealer offers to lease the machine for $21,000 per year for six years, with payments to be made at the beginning of the annual lease period. The duration of the lease is for six years, beginning on December 15, 1985. The lessor requires a residual guarantee from the lessee of $30,000 and the lessee provides all repairs, maintenance and insurance, except for usual manufacturers' warranties. The lessee agrees to use the machine less than 700 hours per year.

To compare this lease with the purchase we have been analyzing, you will have to go through the same procedure as explained for the purchase, determining the present value of net cash outflows after income tax considerations.

The first step in the lease analysis is to determine if this is an operating lease or capital lease as perceived by Revenue Canada. You can enquire at your local taxation office for a ruling, but if they will not give you a ruling, you will have to use your best judgment. Using the CICA guidelines in sections 4.3.1 to 4.3.3., you can make a judgment and classify it as capital lease or operating lease, or you can get the advice of your consultant.

8.6 Determination of Present Value of Cash Outflows for Operating Lease

In dealing with operating leases we can deduct the lease payments as an expense and can now calculate the present value of the net cash outflows for using the leased tractor.

The payments of $21,000 are entered in Table 4 for the years in which the payments are made and the calculations of tax savings are entered in the year that tax savings are realized. The total of all discounted net cash outflows is $65,384 for the lease as described.

This present value total for the operating lease is higher than the present values total for the tractor purchase in Table 3 by $65,384 - $55,048 = $10,336.

8.7 Comparison of the Operating Lease with Purchase

In other words, the present value of cash outflows will be $10,336 more to lease the tractor than to purchase it under the conditions described for each situation.

The difference can be attributed to:

1. For the purchase agreement a B.I.T.C. of $10,000 was allowed for the first year, reducing net cash outflows by that amount in the first year after tax calculations.
2. Capital cost allowances (a non-cash item) were allowed for expenses in the purchase agreement which increased expenses and subsequently, tax savings. Total tax savings for the first four years were substantially higher for the purchase agreement than for the lease.
3. For the purchase agreement, we are estimating that the

farmer will sell the tractor for $30,000, pay the extra taxes incurred and be without a tractor, as will be the lessee who returns the tractor he was leasing to the lessor. For the lease agreement, we are assuming that the dealer (lessor) will sell the tractor for $30,000 and will not call on the lessee to pay more on the residual guarantee he has made.

8.8 Capital Lease

Because of the uncertainty regarding classification of leases as operating or capital leases, we will calculate the present values of net cash outflows for a capital lease also, to see how it compares with a purchase and operating lease.

Let us assume that the same tractor can be leased for $25,000 per year and used for 1,000 hours a year. Lessee has option to buy the tractor at end of Year 5 of lease for $10,000 (on December 15, 1990). He will sell it on December 16, 1990 for $30,000. Using our CICA handbook guidelines we can calculate the present value of the payments to be:

1. The first payment at present value of 1 is $25,000.
2. The remaining five payments present value is 25,000 x 3.274 = $81,850.
3. The option to buy at $10,000 is discounted for 6 years = 10,000 x .410 = $4,100.

Total present value = 25,000 + 81,850 + 4,100 = $110,990.

The classification of this lease as a capital lease can be done by referring to condition 4.3.1 regarding ownership. Because the lease provides for a bargain purchase option, it is classified as a capital lease with a present value of $110,990 or the fair market value if it is less.

You can claim an investment tax credit and capital cost allowance if Revenue Canada determines your eligibility for those allowances.

For calculating income tax savings on a capital lease, we have to determine the amount of each payment which can be attributed to interest so we now make an amortization schedule as follows in Table 5. The original principal must be calculated by determining the present values of all the payments to be made in the future plus the present value of the final payment on the bargain purchase option.

We use $110,990 as the principal amount of payment schedule, and construct a payment schedule in Table 5.

TABLE 5

CAPITAL LEASE PAYMENT SCHEDULE

PMT	BEGINNING OF YEAR PRINCIPAL BALANCE	INTEREST RATE	INTEREST PAID	LEASE PAYMENT	PRINCIPAL PAID	PRINCIPAL BALANCE AFTER PAYMENT
1	110990			25000	25000	85990
2	85990	16	13758	25000	11242	74748
3	74748	16	11960	25000	13040	61708
4	61708	16	9873	25000	15127	46581
5	46581	16	7453	25000	17547	29034
6	29034	16	4645	25000	20355	8679

Also required is a Capital Cost Allowance schedule like the one we made for the tractor purchase (Figure 2). Because of the difference in the principal amount of our payment schedule for the capital lease, calculated at $110,990, we cannot use the same C.C.A. schedule as we used for the purchase agreement where the principal amount was $100,000.

For the capital lease, we use $110,990 as the purchase price and construct a Capital Cost Allowance schedule as shown in Table 6. Because we are allowed to use the B.I.T.C. and C.C.A. as deductions for income tax purposes, we will use a 10 per cent rate for Business Investment Tax Credit and 30 per cent for Capital Cost Allowance rate just as we did in Tables 1 and 3.

TABLE 6

CAPITAL COST ALLOWANCE SCHEDULE FOR CAPITAL LEASE OF TRACTOR

YEAR	UCC AT BEGINNING OF YEAR	CCA RATE %	ANNUAL CCA	UCC AT END OF YEAR
1	99891	½ X 30 = 15	14984	84907
2	84907	30	24572	59435
3	59435	30	17830	41604
4	41604	30	12481	29122
5	29122	30	8737	20385
6	20385	30	6116	14269

Original Cost = 110990
ITC = 110990 x 10% = 11099
Undepreciated Capital Cost After ITC deductions = 110990 - 11099 = 99891

We are now ready to calculate a table for present value analysis of net cash outflow of capital leasing as shown in Table 7.

Present Value Analysis of Net Cash Outflow

TABLE 7

BUY OR CAPITAL LEASE

1 YEAR	2 PAYMENT	3 INTEREST ON LOAN	4 C.C.A.	5 I.T.C.	6 TAX BENEFIT (3 + 4xT.R. + 5)	7 NET CASH OUTFLOW (2-6)	8 PRESENT VALUE FACTOR 10%	9 PRESENT VALUE OF CASH OUTFLOW (7x8)
0	25000		14984	11099	16343	6657	1	6657
1	25000	13758	25472		13731	11269	.909	10244
2	25000	11960	17830		10427	14573	.826	12037
3	25000	9873	12481		7823	17177	.751	12900
4	25000	7453	8737		5667	19333	.683	13204
5	25000	4645	6116		3766	21234	.621	13186
6	(20000)		(15731)		(5505)	(14495)	.564	(8175)
TOTAL								60053

T.R. = Marginal Tax Rate = 35%

8.9 Comparison of Capital Lease, Operating Lease and Purchase of Tractor

Our analysis shows that the deal with the lowest present value of net cash outflows, for the six years of owning or leasing, is the purchase of the tractor.

Present Value of Net Cash Outflow

1.	Purchase agreement	- $55,048	(Table 3)
2.	Operating lease	- $65,384	(Table 4)
3.	Capital lease	- $60,053	(Table 7)

This means only that it is better to purchase for the example comparison shown. It does not mean it is **always** better to purchase than to lease.

If the operating lease payments offered were $17,500 per year instead of $21,000 per year as in the example, the total present value of net cash outflows would be $54,495. This would change the result of the analysis so the operating lease would be the best deal in comparison to purchasing or the capital lease at $55,048 and $60,053, respectively.

At $17,500 per year, the operating lease would certainly be most attractive where the lessee cannot afford to pay $25,000 as a downpayment and $22,906 for the annual loan payment for the purchase, or $25,000 per year for the capital lease.

Keep in mind that the results of comparisons as shown in the example depend very much on the tax position of the lessee. At lower taxable incomes the tax saving deductions such as capital cost allowances and especially the investment tax credit are less useful to decrease total present values of net cash outflows of the lessee. In contrast lower operating lease payments are always beneficial.

Even though we have been able to put numbers on our comparisons, there is some uncertainty about the outcome because of not knowing if the tractor will be sold at $30,000 by the farmer with the purchase agreement or the capital lease. We also don't' know if the lessee in the operating lease agreement will be called on to guarantee the residual value of $30,000 if the lessor doesn't sell the tractor for $30,000.

We have examined a procedure of present value analysis for comparing purchasing and leasing agreements that is useful, but that doesn't eliminate all uncertainty. The most important reason to be familiar with the method is that it provides a method of comparing economic choices that must be made by the farmer. It is better to use an accepted method than to use no method at all in making important evaluations.

Operating leases, capital leases and purchasing are all acceptable ways to acquire the use of a machine and only by comparing can you decide which is best for you.

9. MARGINAL TAX RATE & DISCOUNTING

Two important precautions must be considered to use this method in a realistic way that will prove useful. They are:

9.1 Tax Savings

The short-cut method of calculating taxes that is used in Tables 3, 4 and 7 with a marginal tax rate is accurate enough for our purposes if chosen with care and with a realistic observation of the true tax situation. As the size of the deductible amounts change, the marginal tax rates may have to be adjusted accordingly, in order to be reasonably accurate. For example, if the machines you are comparing cost $50,000 instead of $100,000 and the annual deductible expenses are accordingly half as much, the marginal tax rate might increase, depending on the amount of taxable income. Use a marginal tax rate that fits the tax saving situation.

If you compare Table 3 to Table 1, you will see the difference between using a marginal tax rate of 35 per cent for all years (as on Table 3) and using a more detailed calculation to find the tax rate for each year (as on Table 1). The short-cut method of using a marginal tax rate the same for all years is an accepted practice and useful in saving time and detailed calculations, but the tax rate should be chosen with care.

9.2 Discount Factor

In the three comparisons of present value analysis as shown in Tables 3, 4 and 7, we used a discount rate of 10 per cent as a discount factor to reflect the value of money to be received in future years, but we might have chosen 14 per cent or 12 per cent or 8 per cent instead. Which is the right rate to choose? Many books have been written on the subject of discount rates and many conflicting theories have been proposed.

Our suggestion is that farmers use a rate which reflect their "cost of capital". This is the minimum rate of return which must be earned by a capital investment to make it acceptable to the farmer. If they assume inflation at 8 per cent per year and desire a real return on investment of 8 per cent above the inflation rate, then the discount rate can be set at 16 per cent for these calculations. Since the present value analysis is using after-tax returns, the discount rate should reflect this so 16 per cent is discounted by 35 per cent (16% x .65) = 10.40 per cent. We used 10 per cent in our example as an after tax discount rate.

10. COMPARISONS WHEN PAYMENTS ARE NOT MADE ANNUALLY

Unfortunately, lease payments are not always scheduled as annual payments and this makes it more difficult to analyze the present values on an annual basis. If you want to compare agreements with monthly, quarterly or semi-annual payments, you can change them to an appropriate annual equivalent payment and then use the same procedure as used for Tables 3, 4 and 7 to find present values of net cash outflows. For example, if the operating lease payments as shown in Table 4 at $21,000 per year were to be scheduled at $10,500 at six-month (semi-annual) intervals, it's okay to multiply the semi-annual payments by two to get an approximation of the annual payment. It will not be mathematically correct, but will serve the purpose of making comparisons. If you want to be mathematically correct in your calculations, you would use auxiliary tables showing equivalent per period factors. At a 16 per cent per year nominal rate, which determines a semi-annual rate of interest of 8 per cent, the correct factor to change semi-annual payments to equivalent annual payments is 2.08. At $10,500 for semi-annual payments x 2.08, you would calculate an annual payment of $21,840 instead of $21,000 when you multiplied by two as suggested. At $21,000, your answer is $840 less than the correct answer, but your error is only 3.85 per cent, which is not all that important for your comparisons.

If the payments are made monthly, you can multiply by twelve to get an approximate annual payment. At 16 per cent per year nominal rate, which determines a monthly compounding rate of 1.33 per cent, you will have an understatement of about 7 per cent on the annual payment amount you calculated by multiplying by twelve. To be correct, you could multiply by 12.918 instead of 12. We have included the equivalent per period factors for 12 per cent to 20 per cent in **Table 10 of the Appendix**. Use them to determine the amount of equivalent annual payments from monthly, quarterly or semi-annual payments which are compounded monthly, quarterly or semi-annually; or you could use the equivalent annual interest rates to find the equivalent annual payments.

11. ACCOUNTING FOR LEASES BY THE FARMER

11.1 Operating Lease

For an operating lease such as the one shown in Table 3, the lease payments or rentals can be shown as expenses for the year.

The journal entry could be:

December 15, 1985	**Lease rental** - first payment		
	Dr. Expense	$21,000	
	Cr. Cash		$21,000
December 15, 1986	**Lease rental** - second payment		
	Dr. Expense	$21,000	
	Cr. Cash		$21,000

It may be desirable if a lease is for more than one year to add a footnote to your financial statements explaining the lease agreement. Disclosure should be made of the future minimum lease payments in total and show payments due for each of the succeeding years. This would inform your family and creditors of your future obligations under the lease agreement.

11.2 Capital Lease

The Canadian Institute of Chartered Accountants Handbook (Accounting for Leases) makes the following recommendations:

ACCOUNTING TREATMENT - LESSEE

Method of Accounting for a Capital Lease

To report the total resources at the lessee's disposal and all aspects of the lessee's long-term obligations, a capital lease would be accounted for by the lessee as an acquisition of an asset and an assumption of an obligation. The lessee should account for a capital lease as an asset and an obligation. (Jan. 1979)

The asset value and the amount of the obligation, recorded at the beginning of the lease term, would be the present value of the minimum lease payments, excluding the portion thereof relating to executory costs. The amount relating to executory costs included in the minimum lease payments would be estimated if not known to the lessee. The interest rate implicit in the lease is affected by the residual value of the leased property in which the lessee would usually have no interest. As a result, to use the interest rate implicit in the lease as the discount rate when it is higher than the lessee's rate for incremental borrowing, would produce an amount that is less representative of the value of the asset to the lessee than would be obtained by using the lessee's rate for incremental borrowing as the discount rate. Therefore, the discount rate used by the lessee in determining the present value of minimum lease payments would be the lower of the lessee's rate for incremental borrowing and the interest rate implicit in the lease, if practicable to determine. Notwithstanding the foregoing, the maximum value recorded for the asset and obligation may not exceed the leased asset's fair value.

The capitalized value of a depreciable asset under a capital lease would be amortized over the period of expected use, on a basis that is consistent with the lessee's depreciation policy for other similar fixed assets. If the lease contains terms that allow ownership to pass to the lessee or a bargain purchase option, the period of amortization would be the economic life of the asset. Otherwise the property would be amortized over the lease term.

An obligation under a capital lease is similar to a loan. Lease payments would be allocated to a reduction of the obligation, interest expense and any related executory costs. The interest expense would be calculated using the discount rate used in computing the present value of the minimum lease payments applied to the remaining balance of the obligation. Contingent rentals would be charged to expense as incurred.

Statement Presentation and Disclosure for a Capital Lease

In order to distinguish between assets that the enterprise owns and those that it only has the right to use, assets leased under capital leases would be disclosed separately. The related lease obligations would be separated from other long-term obligations. The gross amount of assets under capital leases and related accumulated amortization should be disclosed. Disclosure of leased property and accumulated amortization by major category, e.g. land, buildings, machinery, may be desirable.

Obligations related to leased assets should be shown separately from other long-term obligations. Particulars of obligations related to leased assets, including interest rates and expiry dates, should be shown separately from other long-term obligations. Significant restrictions imposed on the lessee as a result of the lease agreement should be disclosed. It may be desirable to disclose the existence and terms of renewal or purchase options that are not included in the computation of minimum lease payments. (Jan. 1979)

Any portion of lease obligations payable within a year out of current funds should be included in current liabilities. (Jan. 1979)

Disclosure should be made of the future minimum lease payments in aggregate and for each of the five succeeding years. A separate deduction should be made from the aggregate figure for amounts included in the minimum lease payments representing executory costs and imputed interest. The resultant net amount would be the balance of the unpaid obligation. (Jan. 1979)

The amount of amortization of leased property included in the determination of net income should be disclosed separately or as part of depreciation and amortization expense for fixed assets. Disclosure should also be made of methods and rates of amortization. (Jan. 1979)

Interest expense related to lease obligations should be disclosed separately, or as part of interest on long-term indebtedness. (Jan. 1979)

It may be desirable to disclose separately the amount of contingent rentals included in the determination of net income and to disclose the basis of determination of such rentals. In order to permit an assessment of commitments under lease obligations, it may be appropriate to disclose the amount of future minimum rentals receivable from non-cancellable sub-leases.

11.3 Journal Entries For A Capital Lease

Following these recommendations in our example of the capital lease for the tractor, we can refer to Tables 5 and 6 for the information we need. Because of farmers' concern for accounting for income tax regulations, we will use the Capital Cost Allowance schedule instead of a management depreciation schedule in our accounting example.

Journal entries would be:

1985				
Dec. 15		Record asset leased and related liability.		
	Dr.	Tractor under capital lease	$110990	
	Cr.	Obligation under capital lease		$110990
Dec. 15		Record 1985 lease payment of $ 25000		
	Dr.	Obligation under capital lease	$ 25000	
	Cr.	Cash		$25000
Dec. 31		Record Capital Cost Allowance for tractor under capital lease (from Table 5)		
	Dr.	Capital Cost Allowance	$ 14984	
	Cr.	Accumulated Capital Cost Allowance		$ 14984
1986				
Dec. 15		Record 1986 lease payment (from Table 4)		
	Dr.	Interest Expense	$ 13758	
	Dr.	Obligation under capital lease	$ 11242	
	Cr.	Cash		$ 25000
Dec. 31		Record Capital Cost Allowance for 1986		
	Dr.	Capital Cost Allowance	$ 25472	
	Cr.	Accumulated Capital Cost Allowance		$ 25472

Although the accounting procedures to record capital lease transactions are similar to those you would use to record the purchase of a machine or other assets, you should show the capital lease assets and obligations separately from your purchased assets and liabilities on your statements (such as balance sheet, income and expense statement and statement of change in financial position).

12. SUGGESTIONS FOR SATISFACTORY DEALS

1. Do not buy or lease a machine to minimize income tax as the only purpose for the transaction.
2. Be sure to make use of all annual income tax deductions, such as Basic Personal Exemptions,to minimize your tax before claiming capital cost allowance and Business Investment Tax Credits. C.C.A. and B.I.T.C. not claimed for 1985 will still be available to claim for 1986 but your Basic Personal Exemptions, if not used to minimize taxable income, are lost and cannot be used next year.
3. Compare all terms and conditions of purchase and lease agreement contracts, and understand them completely before signing contracts.
4. Go to your competent professional adviser for advice and counsel before signing a contract.
5. Make sure all terms and conditions are written in the contract you sign, with correct dates, times and places. Ask who, why, what, when, where and how for every factor.
6. Check to see if person signing contract for dealer has authority to do so.
7. Make sure machine is properly and completely identified in the contract, with manufacturer, year of manufacture, model, type and serial number. List all auxiliary attachments with complete identification.
8. Make your offer subject to approval of your lawyer.
9. After contracts are signed, keep legible copies of all papers concerned with the transaction in a safe location for further reference.

13. SUMMARY

At the present time (March 10, 1985), the most useful and simple way to compare leasing or purchasing machinery is by calculating the total present value of annual after-tax net cash outflow of leasing or purchasing.

Worksheets and a microcomputer program are available to help you complete the calculations necessary to make comparisons, from the Farm Business Management Branch, Box 2000, Olds, Alberta, T0M 1P0. Our phone number is 556-4240.

For leases, the usefulness of your calculations and comparisons will depend on Revenue Canada's ruling on their perception of your lease. In some cases, they may rule that a lease agreement is, in substance, a sale agreement and require the lessee to account for the transaction as an acquisition of an asset and an assumption of a liability. The lessee may be entitled to claim the Capital Cost Allowance and any investment tax credit.

Accounting for capital leases is very much like accounting for purchased assets except that all disclosures of lease agreement information should be entered separately and presented separately in your financial statements.

Further information on leases can be obtained by calling the author of this article, Craig Edwards at 556-4248 or by writing to the Farm Business Management Branch, Box 2000, Olds, Alberta, T0M 1P0.

14. REFERENCES

1. "Capital Investment Analysis Using Discounted Cash Flows" by Richard D. Aplin, George L. Casler and Cheryl P. Francis. Grid Publishing, Inc., Columbus, Ohio.

2. Farm Implement Act, Government of the Province of Alberta.

3. Interpretation Bulletin No. IT233R from Revenue Canada.

4. "Accounting for Leases", Section 3065 of the CICA Handbook.

5. Farm Management Data Manual by Farm Business Management Branch, Olds, Alberta.

6. Financial Compound Interest and Annuity Tables, Fifth Edition by Financial Publishing Company.

APPENDIX A

PRESENT VALUE FACTORS

TABLE 8

A dollar today is worth more than a dollar sometime in the future because of the interest that dollar could earn if invested over that period of time. This table is used to determine the present value of a single payment received "n" years from the present. The interest rate you choose to use should be one that is approximate to the one that could be obtained at the present if you were to invest your money.

Example: You would like to determine the present value of receiving $1000 ten years from now (interest rate = 10 per cent). Looking at the table on the next page, we find the factor given is .3855. Therefore, the present value = 1000 x .3855 = $385.50.

UNIFORM SERIES PRESENT WORTH FACTORS
OR
CUMULATIVE PRESENT VALUE FACTORS

TABLE 9

This table is very similar to the previous one, but is used to determine the present value of a series of "n" payments in the future.

Example: You would like to determine the present value of a series of $100 annual payments for a period of ten years (interest rates = 10 per cent). Looking at the table, we find the factor given is 6.145. Therefore, the cumulative present value = $100 x 6.145 = $614.50.

TABLE 8
SINGLE PAYMENT

PRESENT VALUE FACTORS

This table is used to determine the present value of a single payment received 'n' years from the present, or it may be used in reverse to find the future value of a given sum of money.

Years	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174	.9091
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417	.8264
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722	.7513
4	.9610	.9238	.8885	.8548	.8227	.7921	.7629	.7350	.7084	.6830
5	.9515	.9057	.8626	.8219	.7835	.7473	.7130	.6806	.6499	.6209
6	9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963	.5645
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5470	.5132
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019	.4665
9	.9143	.8368	.7664	.7026	.6446	.5919	.5439	.5002	.4604	.4241
10	.9053	.8203	.7441	.6756	.6139	.5584	.5083	.4632	.4224	.3855
11	.8963	.8043	.7224	.6496	.5847	.5268	.4751	.4289	.3875	.3505
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555	.3186
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262	.2897
14	.8700	.7579	.6611	.5775	.5051	.4423	.3878	.3405	.2992	.2633
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745	.2394
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519	.2176
17	.8444	.7142	.6050	.5134	.4363	.3714	.3166	.2703	.2311	.1978
18	.8360	.7002	.5874	.4936	.4155	.3503	.2959	.2502	.2120	.1799
19	.8277	.6864	.5703	.4746	.3957	.3305	.2765	.2317	.1945	.1635
20	.8195	.6730	.5537	.4564	.3769	.3118	.2584	.2145	.1784	.1486
21	.8114	.6598	.5375	.4388	.3589	.2942	.2415	.1987	.1637	.1351
22	.8034	.6468	.5219	.4220	.3418	.2775	.2257	.1839	.1502	.1228
23	.7954	.6342	.5067	.4057	.3256	.2618	.2109	.1703	.1378	.1117
24	.7876	.6217	.4919	.3901	.3101	.2470	.1971	.1577	.1264	.1015
25	.7798	.6095	.4776	.3751	.2953	.2330	.1842	.1460	.1160	.0923
26	.7720	.5976	.4637	.3607	.2812	.2198	.1722	.1352	.1064	.0839
27	.7644	.5859	.4502	.3468	.2678	.2074	.1609	.1252	.0976	.0763
28	.7568	.5744	.4371	.3335	.2551	.1956	.1504	.1159	.0895	.0693
29	.7493	.5631	.4243	.3207	.2429	.1846	.1406	.1073	.0822	.0630
30	.7419	.5521	.4120	.3083	.2314	.1741	.1314	.0994	.0754	.0573
31	.7346	.5412	.4000	.2965	.2204	.1643	.1228	.0920	.0691	.0521
32	.7273	.5306	.3883	.2851	.2099	.1550	.1147	.0852	.0634	.0474
33	.7201	.5202	.3770	.2741	.1999	.1462	.1072	.0789	.0582	.0431
34	.7130	.5100	.3660	.2636	.1904	.1379	.1002	.0730	.0534	.0391
35	.7059	.5000	.3554	.2534	.1813	.1301	.0937	.0676	.0490	.0356
36	.6989	.4902	.3450	.2437	.1727	.1227	.0875	.0626	.0449	.0323
37	.6920	.4806	.3350	.2343	.1644	.1158	.0818	.0580	.0412	.0294
38	.6852	.4712	.3252	.2253	.1566	.1092	.0765	.0537	.0378	.0267
39	.6784	.4619	.3158	.2166	.1491	.1031	.0715	.0497	.0347	.0243
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318	.0221

TABLE 8
SINGLE PAYMENT

PRESENT VALUE FACTORS (continued)

This table is used to determine the present value of a single payment received 'n' years from the present, or it may be used in reverse to find the future value of a given sum of money.

Years	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	.9009	.8929	.8850	.8772	.8696	.8621	.8547	.8475	.8403	.8333
2	.8116	.7972	.7831	.7695	.7561	.7432	.7305	.7182	.7062	.6944
3	.7312	.7118	.6931	.6750	.6575	.6407	.6244	.6086	.5934	.5787
4	.6587	.6355	.6133	.5921	.5718	.5523	.5337	.5158	.4987	.4823
5	.5935	.5674	.5428	.5194	.4972	.4761	.4561	.4371	.4190	.4019
6	.5346	.5066	.4803	.4556	.4323	.4104	.3898	.3704	.3521	.3349
7	.4817	.4523	.4251	.3996	.3759	.3538	.3332	.3139	.2959	.2791
8	.4339	.4039	.3762	.3506	.3269	.3050	.2848	.2660	.2487	.2326
9	.3909	.3606	.3329	.3075	.2843	.2630	.2434	.2255	.2090	.1938
10	.3522	.3220	.2946	.2697	.2472	.2267	.2808	.1911	.1756	.1615
11	.3173	.2875	.2607	.2366	.2149	.1954	.1778	.1619	.1476	.1346
12	.2858	.2567	.2307	.2076	.1869	.1685	.1520	.1372	.1240	.1122
13	.2575	.2292	.2042	.1821	.1625	.1452	.1299	.1163	.1042	.0935
14	.2320	.2046	.1807	.1597	.1413	.1252	.1110	.0985	.0876	.0779
15	.2090	.1827	.1599	.1401	.1229	.1079	.1949	.0835	.0736	.0649
16	.1883	.1631	.1415	.1229	.1069	.0930	.0818	.0708	.0618	.0541
17	.1696	.1456	.1252	.1078	.0929	.0802	.0693	.0600	.0520	.0451
18	.1528	.1300	.1108	.0946	.0808	.0691	.0592	.0508	.0437	.0376
19	.1377	.1161	.0981	.0829	.0703	.0596	.0506	.0431	.0367	.0313
20	.1240	.1037	.0868	.0728	.0611	.0514	.0433	.0365	.0303	.0261
21	.1117	.0926	.0768	.0638	.0531	.0443	.0370	.0309	.0259	.0217
22	.1007	.0826	.0680	.0560	.0462	.0382	.0316	.0262	.0218	.0181
23	.0907	.0738	.0601	.0491	.0402	.0329	.0270	.0222	.0183	.0151
24	.0817	.0659	.0532	.0431	.0349	.0284	.0231	.0188	.0154	.0126
25	.0736	.0588	.0471	.0378	.0304	.0245	.0197	.0160	.0129	.0105
26	.0663	.0525	.0417	.0331	.0264	.0211	.0169	.0135	.0109	.0087
27	.0597	.0469	.0369	.0291	.0230	.0182	.0144	.0115	.0091	.0073
28	.0538	.0419	.0326	.0255	.0200	.0157	.0123	.0097	.0077	.0061
29	.0485	.0374	.0289	.0224	.0174	.0135	.0105	.0082	.0064	.0051
30	.0437	.0334	.0256	.0196	.0151	.0116	.0090	.0070	.0054	.0042
31	.0394	.0298	.0226	.0172	.0131	.0100	.0077	.0059	.0046	.0035
32	.0355	.0266	.0200	.0151	.0114	.0087	.0066	.0050	.0038	.0029
33	.0319	.0238	.0177	.0132	.0099	.0075	.0056	.0042	.0032	.0024
34	.0288	.0212	.0157	.0116	.0086	.0064	.0048	.0036	.0027	.0020
35	.0259	.0189	.0139	.0102	.0075	.0055	.0041	.0030	.0023	.0017
36	.0234	.0169	.0123	.0089	.0065	.0048	.0035	.0026	.0019	.0014
37	.0210	.0151	.0109	.0078	.0057	.0041	.0030	.0022	.0016	.0012
38	.0190	.0135	.0096	.0069	.0049	.0036	.0026	.0019	.0013	.0010
39	.0171	.0120	.0085	.0060	.0043	.0031	.0022	.0016	.0011	.0008
40	.0154	.0107	.0075	.0053	.0037	.0026	.0019	.0013	.0010	.0007

TABLE 9

CUMULATIVE PRESENT VALUE FACTORS

This table is used to determine the present value of a series of 'n' payments.

Years	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
0 - 1	.990	.980	.971	.962	.952	.943	.935	.926	.917	.909
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791
6	5.795	5.601	5.417	5.242	5.076	4.971	4.767	4.623	4.486	4.355
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145
11	10.378	9.787	9.253	8.760	8.306	7.887	7.499	7.139	6.805	6.495
12	11.255	10.575	9.954	9.385	8.863	8.384	7.943	7.536	7.161	6.814
13	12.134	11.348	10.635	9.986	9.394	8.853	8.358	7.904	7.487	7.103
14	13.004	12.106	11.296	10.563	9.899	9.295	8.745	8.244	7.786	7.367
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.292	8.649
22	19.660	17.658	14.937	14.451	13.163	12.042	11.061	10.201	9.442	8.772
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.580	8.883
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.707	8.985
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077
26	22.795	20.121	17.877	15.983	14.375	13.003	11.826	10.810	9.929	9.161
27	23.560	20.707	18.327	16.330	14.643	13.211	11.987	10.935	10.207	9.237
28	24.316	21.281	18.764	16.663	14.898	13.406	12.137	11.051	10.116	9.307
29	25.066	21.844	19.188	16.984	15.141	13.591	12.278	11.158	10.198	9.370
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427
31	26.542	22.938	20.000	17.588	15.593	13.929	12.532	11.350	10.343	9.479
32	27.720	23.468	20.389	17.874	15.803	14.084	12.647	11.435	10.406	9.526
33	27.990	23.989	20.766	18.148	16.003	14.230	12.754	11.514	10.464	9.569
34	28.703	24.499	21.132	18.411	16.193	14.368	12.854	11.587	10.518	9.609
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.644
36	30.108	25.489	21.832	18.908	16.547	14.621	13.035	11.717	10.612	9.677
37	30.780	25.969	22.167	19.143	16.711	14.737	13.117	11.775	10.653	9.706
38	31.485	26.441	22.492	19.368	16.868	14.846	13.193	11.829	10.691	9.733
39	32.163	26.903	22.808	19.584	17.017	14.949	13.265	11.879	10.726	9.757
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.779

TABLE 9

CUMULATIVE PRESENT VALUE FACTORS (continued)

This table is used to determine the present value of a series of 'n' payments.

Years	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
0 - 1	.901	.893	.885	.877	.870	.862	.855	.848	.840	.833
2	1.712	1.690	1.668	1.647	1.626	1.605	1.585	1.566	1.546	1.528
3	2.444	2.402	2.361	2.322	2.283	2.246	2.210	2.174	2.140	2.106
4	3.102	3.307	2.974	2.914	2.855	2.798	2.743	2.690	2.639	2.489
5	3.696	3.605	3.517	3.433	3.352	3.274	3.199	3.127	3.058	2.991
6	4.230	4.111	3.998	3.889	3.784	3.685	3.589	3.498	3.410	3.326
7	4.712	4.564	4.423	4.288	4.160	4.039	3.922	3.812	3.706	3.405
8	5.146	4.968	4.799	4.639	4.487	4.344	4.207	4.078	3.954	3.837
9	5.537	5.328	5.132	4.946	4.772	4.607	4.451	4.303	4.163	4.031
10	5.889	5.650	5.426	5.216	5.019	4.833	4.659	4.494	4.339	4.192
11	6.206	5.938	5.687	5.453	5.234	5.029	4.836	4.656	4.486	4.327
12	6.492	6.194	5.918	5.660	5.420	5.197	4.988	4.793	4.610	4.439
13	6.750	6.424	6.122	5.842	5.583	5.342	5.118	4.910	4.715	4.533
14	6.982	6.628	6.303	6.002	5.724	5.468	5.229	5.008	4.802	4.611
15	7.191	6.811	6.463	6.142	5.847	5.576	5.324	5.092	4.876	4.676
16	7.379	6.974	6.604	6.265	5.954	5.668	5.405	5.162	4.938	4.730
17	7.549	7.120	6.729	6.373	6.047	5.749	5.475	5.222	4.990	4.775
18	7.702	7.250	6.840	6.468	6.128	5.818	5.534	5.273	5.033	4.812
19	7.839	7.366	6.938	6.550	6.198	5.877	5.584	5.316	5.070	4.844
20	7.963	7.469	7.025	6.623	6.259	5.929	5.628	5.353	5.101	4.870
21	8.075	7.562	7.102	6.687	6.312	5.973	5.665	5.384	5.127	4.892
22	8.176	7.645	7.170	6.743	6.358	6.011	5.696	5.410	5.149	4.910
23	8.266	7.718	7.230	6.792	6.399	6.044	5.723	5.432	5.167	4.925
24	8.348	7.784	7.283	7.835	6.434	6.073	5.746	5.451	5.182	4.937
25	8.422	7.843	7.330	6.873	6.464	6.097	5.766	5.467	5.195	4.948
26	8.488	7.896	7.372	6.906	6.490	6.118	5.783	5.480	5.206	4.956
27	8.548	7.942	7.409	6.935	6.513	6.136	5.797	5.492	5.215	4.964
28	8.601	7.984	7.441	6.961	6.533	6.152	5.810	5.502	5.223	4.970
29	8.650	8.022	7.470	6.983	6.551	6.166	5.820	5.510	5.229	4.975
30	8.694	8.055	7.496	7.003	6.566	6.177	5.829	5.517	5.235	4.979
31	8.733	8.085	7.518	7.020	6.579	6.187	5.837	5.523	5.239	4.983
32	8.768	8.112	7.538	7.035	6.590	6.196	5.844	5.528	5.243	4.986
33	8.800	8.135	7.556	7.048	6.600	6.203	5.849	5.532	5.246	4.988
34	8.829	8.157	7.572	7.060	6.609	6.210	5.854	5.535	5.249	4.990
35	8.855	8.176	7.586	7.070	6.616	6.215	5.858	5.538	5.251	4.992
36	8.878	8.192	7.598	7.079	6.623	6.220	5.862	5.541	5.253	4.993
37	8.900	8.208	7.609	7.087	6.629	6.224	5.864	5.543	5.255	4.994
38	8.918	8.221	7.619	7.094	6.634	6.228	5.867	5.545	5.256	4.995
39	8.936	8.233	7.627	7.100	6.638	6.231	5.869	5.547	5.257	4.996
40	8.951	8.244	7.635	7.105	6.642	6.234	5.871	5.548	5.258	4.997

APPENDIX B

EQUIVALENT ANNUAL PAYMENT FACTORS

Use this table to calculate the amount of an equivalent annual payment from a uniform series of payments made monthly, quarterly or semi-annually, when interest is compounded monthly, quarterly or semi-annually respectively.

TABLE 10. EQUIVALENT ANNUAL PAYMENT FACTORS

Nominal Interest Rate Per year	Monthly Payments and Compounding	Equivalent Annual Payment Factor	Equivalent Annual Interest Rate
12	1% = .01	12.683	12.683
13	1 1/12% = 1.0833 = .010833	12.741	13.803
14	1 1/6% = 1.166% = .01166	12.800	14.934
15	1 1/4% = 1.25% = .0125	12.860	16.074
16	1 1/3% = 1.33% = .0133	12.918	17.181
17	1 5/12% = 1.416% = .01416	12.980	18.379
18	1 1/2% = 1.500% = .015	13.041	19.562
19	1 7/12% = 1.5833% = .01583	13.104	20.745
20	1 2/3% = 1.66% = .0166	13.216	21.843
Quarterly Payments and Compounding			
12	3% = .03	4.183	12.551
13	3 1/4% = 3.25% = .0325	4.199	13.647
14	3 1/2% = 3.50% = .035	4.215	14.752
15	3 3/4% = 3.75% = .0375	4.230	15.865
16	4% = .040	4.246	16.985
17	4 1/4% = 4.25% = .0425	4.262	18.115
18	4 1/2% = 4.50% = .045	4.278	19.252
19	4 3/4% = 4.75% = .0475	4.294	20.397
20	5% = .050	4.310	21.551
Semi-Annual Payments and Compounding			
12	6% = .06	2.06	12.36
13	6 1/2% = 6.5% = .065	2.065	13.423
14	7% = .07	2.07	14.49
15	7 1/2% = 7.5% = .075	2.075	15.563
16	8% = .08	2.08	16.64
17	8 1/2% = 8.5% = .085	2.085	17.723
18	9% = .09	2.09	18.81
19	9 1/2% = 9.5% = .095	2.095	19.903
20	10% = .10	2.10	21.000

APPENDIX C

[¶ 52,237] [Interpretation Bulletin No. IT-233R] Lease-option agreements; Sale-leaseback agreements.

[Interpretation Bulletin No. IT-233R, *dated February* 11, 1983 *issued by the Department of National Revenue, Taxation, replaces Interpretation Bulletin No.* IT-233 *dated July* 14, 1975. *The Bulletin discusses the Department's attitude towards the tax treatment of payments under various kinds of lease-option and sale-leaseback agreements.* CCH.]

Reference: Paragraph 18(1)(*b*) (also subsections 9(1), 13(5.2), 13(5.3), 16(1), 18(9) and 245(1), and paragraphs 18(1)(*a*) and 20(1)(*k*)).

1. It is necessary to determine, with regard to leasing agreements, whether payments in respect of those agreements are in substance payments of rent or payments on account of the purchase price of property or, in the case of sale-leaseback agreements, repayments of a loan. As there is no special provision in the *Income Tax Act* dealing with such agreements, this determination must be made on consideration of both the terms of the agreement and the factual circumstances relevant to both the making and execution of that agreement.

2. Individual cases will be treated in accordance with the general comments contained in this bulletin.

Lease-Option Agreements

3. The Department's principal concern in lease-option agreements is to ensure that significant sums paid for the purchase of property are not charged against income as rent but are accounted for in such a manner that they may, if applicable, be subject to capital cost allowance and its recapture. The enactment of subsection 13(5.2) (see 10 below) resolved, in part, the Department's concern in this matter but it is still considered necessary to determine whether or not the object of a transaction at its inception is to transfer the ownership in property from a lessor to a lessee. Therefore, under conditions similar to those that follow, a transaction is considered to be a sale rather than a lease:

(a) the lessee automatically acquires title to the property after payment of a specified amount in the form of rentals,

(b) the lessee is required to buy the property from the lessor during or at the termination of the lease or is required to guarantee that the lessor will receive the full option price from the lessee or a third party (except where such guarantee is given only in respect of excessive wear and tear inflicted by the lessee),

(c) the lessee has the right during or at the expiration of the lease to acquire the property at a price which at the inception of the lease is substantially less than the probable fair market value of the property at the time or times of permitted acquisition by the lessee. An option to purchase of this nature might arise where it is exercisable within a period which is materially less than the useful life of the property with the rental payments in that period amounting to a substantial portion of the fair market value of the property at the date of inception of the lease, or

(d) the lessee has the right during or at the expiration of the lease to acquire the property at a price or under terms or conditions which at the inception of the lease is/are such that no reasonable person would fail to exercise the said option.

4. The option to purchase may be part of or separate from the lease agreement itself or may be a verbal agreement or undertaking. Where, although not specified in the agreement, it becomes apparent, for example, as a result of previous similar transactions undertaken by the parties involved, that it is the intention that the lessee be allowed to acquire the property at the termination of the lease for an amount that is less than its probable fair market value, the transaction is considered to be a sale.

5. The Department is aware that many lease contracts are in the nature of "financial leases" in which the lessor is providing a financial service only. As a result certain costs or obligations that are usually considered incidental to ownership, such as taxes, insurance, maintenance and other obligations become the responsibility of the lessee. In the Department's view the assumption of these obligations by the lessee or any other conditions of the lease that may be indicative of a sale, are not, in and by themselves, conclusive in determining whether the transaction is in substance a sale.

Such conditions only add corroborative support where a transaction can be considered to be a sale under the circumstances stated in paragraph 3 above.

6. In relation to the above factors the registration of the transaction as a conditional sales contract is also not a decisive factor.

7. When it is determined that a lease agreement is, in substance, a sale agreement in the circumstances outlined in 3 and 4 above, the lessee will be required to account for the transaction as an acquisition of an asset and an assumption of a liability as at the inception of the lease. The lessor will similarly be required to account for the transaction as a sale of the property and the establishment of a receivable. In these circumstances the lessee-purchaser rather than the lessor-vendor may be entitled to capital cost allowance under paragraph 20(1)(*a*) and to any investment tax credit as contemplated by subsection 127(9).

8. Where it is determined that a lease agreement is, in substance, a sale agreement in the circumstances outlined in 3 and 4 above, the provisions of subsection 16(1) may apply to the vendor. This would occur, for example, where the fair market value of the property is less than the amounts to be paid therefor over the life of the contract, including the option price. Where an amount is required by subsection 16(1) to be included in the vendor's income, the purchaser may deduct a like amount from its income by virtue of paragraph 20(1)(*k*), subject to the reasonableness test in section 67.

9. The vendor's proceeds of disposition will be the total of the amounts receivable under the contract less any portion thereof which was included in his income under subsection 16(1). The same amount will be the purchaser's cost of the property.

10. Where, at any time after December 11, 1979, a taxpayer acquires a capital property that is depreciable property or real property, for an amount that is less than its fair market value at that time, and the property is one in respect of which the taxpayer, or a person with whom the taxpayer was not dealing at arm's length, had before that time been entitled to deduct rent for the use of or the right to use the property in computing his income, the taxpayer will, by virtue of subsection 13(5.2), be deemed to have acquired that property for all purposes of the Act, at a cost equal to the lesser of:

(a) its fair market value at the time of acquisition determined without reference to any option with respect to the property, and

(b) the aggregate of

  (i) the purchase price actually paid by the taxpayer, and

  (ii) all rent paid or payable with respect to the property including rent paid or payable by any person with whom the taxpayer was not dealing at arm's length and excluding any rent paid or payable to a person with whom the taxpayer was not dealing at arm's length.

Subsection 13(5.2) will apply in the circumstances described above to a transaction that occurs during the currency of a lease or after it has terminated for any reason. It will also apply where the purchase option price at the time of acquisition is reduced below the fair market value at that time by the application of any credits, as for example, the application of rentals as discussed in 13 below. Subsection 13(5.2) will not apply with respect to a transaction where, as discussed in 3 and 4 above, it is considered to be a sale rather than a lease. Subsection 13(5.2) will apply if the taxpayer had been renting the property under an ordinary lease (see 13 below) prior to entering into the lease-option agreement that was considered to be a sale as discussed in 3 and 4 above and the purchase price as determined in 9 above is less than the fair market value.

11. Where the deemed cost of the property as determined in 10 above exceeds its actual purchase price, an amount equal to the excess must be added to the accumulated depreciation for the prescribed class to which the property belongs. The excess is accordingly considered to represent capital cost allowance previously allowed and as such it will be included in total depreciation as defined in paragraph 13(21)(*e*). Where the property is not depreciable property as defined by paragraph 13(21)(*b*) (e.g. land), it is deemed by paragraph 13(5.2)(*c*) to be depreciable property of a separate prescribed class and if the deemed cost of any such property (see 10 above) exceeds its actual purchase price, an amount equal to

the excess will constitute total depreciation in respect thereof within the meaning of paragraph 13(21)(*e*). This deeming provision relative to non-depreciable assets will, in appropriate circumstances, ensure the recapture, as though it were depreciation, of all or part of the rent paid for the use of or the right to use such assets in a manner similar to that for depreciable assets where the circumstances surrounding the acquisition are described in 10 above.

12. Where, at any time after January 12, 1981, a taxpayer disposes of a capital property that is an option to acquire either real or depreciable property which the taxpayer, or a person with whom the taxpayer was not dealing at arm's length, had been renting and had been entitled to deduct the rent in computing income, the amount by which the proceeds of disposition of that option exceed its cost to the taxpayer will, by virtue of subsection 13(5.3), be deemed to be an excess as contemplated by subsection 13(1) and will thus be included in the taxpayer's income.

13. When it is determined that a lease agreement is in substance an ordinary lease rather than a sale agreement, the periodical payments stipulated therein will constitute rent for the use of or the right to use the leased property and as such, may qualify as a deduction in computing a taxpayer's income to the extent that their deferral is not required by subsection 18(9) and to the extent that they are incurred for the purpose of earning income from a business or property. In these circumstances, the exercise, at any time, by a lessee of an option to purchase the leased property does not convert any amounts that were, before that time, deductible as rent to instalments of the sale price even if the agreement provides that some portion of them will be so applied should the option be exercised. Where a part of the rentals are to be so applied, "the purchase price actually paid by the taxpayer" in 10(*b*)(i) above will be the option price net of the rentals applied against it.

Sale-Leaseback Agreements

14. A sale-leaseback agreement involves two separate transactions; the sale of the property to the prospective lessor and the subsequent lease of the property to the original owner. In respect of such an agreement, the Department's principal concern is in ensuring that repayments of what are in substance borrowed funds are not being charged against income as rent. Where it is apparent that the true intent of the parties is that the lessee borrow money on the security of property, the agreement is in substance a loan arrangement. Such an intent is strongly indicated where the sale price of the property is substantially different from its fair market value especially where, as would ordinarily be the case, the subsequent lease of the property provides for its reacquisition by the lessee under conditions similar to those outlined in 3 and 4 above.

15. For determining whether the sale price is substantially different from fair market value, in the case of new property, its cost to the potential lessee is considered to be its fair market value; however, in the case of used property, an objective third party appraisal generally would be sufficient proof of its fair market value.

16. Where the sale of the property has been made at fair market value, it is also necessary to determine, on the basis of the above comments under the heading "Lease-Option Agreements", whether or not the subsequent leasing of the property to the original owner is in substance a sale.

17. Where a sale-leaseback agreement is determined to be a loan arrangement, a sale of the property is considered not to have taken place and the lessor and lessee are considered to be a lender and a borrower respectively with the payments being dealt with on account of principal and interest. The total amount of interest is readily ascertainable by computing the difference between the amount advanced and the total to be repaid. The interest content of individual payments can be determined by recourse to appropriate interest tables. The question of whether the borrower may deduct the interest portion depends on the use made of the borrowed funds.

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APPENDIX D
WORKSHEETS

OPERATING LEASE OR CUSTOM WORK					
1 YEAR	2 PAYMENT	3 TAX SAVINGS (2xT.R.)	4 NET CASH OUTFLOW (2-3)	5 PRESENT VALUE FACTOR	6 PRESENT VALUE OF NET CASH OUTFLOW (4x5)
TOTAL					

T.R. = Marginal Tax Rate

BUY OR CAPITAL LEASE								
1 YEAR	2 PAYMENT	3 INTEREST ON LOAN	4 C.C.A.	5 I.T.C.	6 TAX BENEFIT (3 + 4xT.R. + 5)	7 NET CASH OUTFLOW (2-6)	8 PRESENT VALUE FACTOR	9 PRESENT VALUE OF CASH OUTFLOW (7x8)
TOTAL								

T.R. = Marginal Tax Rate

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